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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,238	11/21/2001	Dahai Yu	MEIP118201	1926
26389	7590	10/19/2005	EXAMINER	
CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC			CHAWAN, SHEELA C	
1420 FIFTH AVENUE			ART UNIT	
SUITE 2800			PAPER NUMBER	
SEATTLE, WA 98101-2347			2623	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/990,238	YU ET AL.	
	Examiner	Art Unit	
	Sheela C. Chawan	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,10,12,16 and 17 is/are rejected.
- 7) ☒ Claim(s) 3-9,11 and 13-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on August 8, 2005 has been entered and made of record.

Claims 1-17 are pending in the application.

Response to Arguments

2. Applicant's arguments filed on August 8, 2005 have been fully considered but they are not persuasive.

3. In the remark, applicants have argued in substance that:

1. On page 8, lines 1- 6 applicant's argue that applicants' prior art, "description of prior art Quick Vision series of vision inspection machines and QVPAK software", describe a method that is effective for tracing an edge of a two-dimensional image that is well focused throughout, and which therefore does not extend over depth range greater than the depth of the field of an image. As shown in applicants' figures 1A – 1C, which illustrate the prior, art method, and as described in the accompanying sections of applicant's specification, on page 4, lines 21-32.

2. On page 8, lines 27-30 and page 9, lines 2- 6 applicant's argue that applicants' "description of prior art Quick Vision series of vision inspection machines and QVPAK software", which does not determine a desired next edge point source image based on the next edge point XY trial location and previously acquired data, wherein the next edge point source image may be different than the latest previous

Art Unit: 2623

edge point image due to the latest previous edge point and the next edge point being in focus at different focus positions.

3. On page 9, lines 20-24 applicant's argue that applicants' "description of prior art Quick Vision series of vision inspection machines and QVPAK software ", which is directed to a two-dimensional auto edge tracing method, which does not utilize a plurality of images acquired at different focus position in order to determine the next edge point source image.

In the reply, the examiner states the following.

As to point 1, with respect to the art rejection, the examiner has carefully considered applicant's argument, but firmly believes the cited reference to reasonably and properly meet the claimed limitation. The examiner does not agree with the remarks. In response to applicants' arguments, on page 8, lines 1- 6, the recitation have not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951):

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "the plurality of edge points extend over a depth range greater than the depth of

Art Unit: 2623

field of an image") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

As to point 2, the examiner does not agree. This limitation is described in the following lines in the "Background of the invention" starting from the line 14 "This product includes a two- dimensional auto trace edge detection tool ... A linear extrapolation line E1B is shown through the edge points B1 and B2 ". This information is described in detail in the above text. Each time the edge scan line is moved it is adjacent to the previous one. Each edge point is a focus point on that scan line. The steps are also mentioned in the figures 1A-1C. This limitation is taught by "description of prior art Quick Vision series of vision inspection machines and QVPAK software", refer to "Background of the invention" starting from the line 14 "This product includes a two- dimensional auto trace edge detection tool ... A linear extrapolation line E1B is shown through the edge points B1 and B2 ". Giving the claim language its broadest reasonable interpretation, applicant's prior art meets the claim limitations.

As to point 3, the examiner does not agree. This limitation is taught by applicant's prior art discloses the method, wherein the previously acquired data comprises a plurality of images acquired at a plurality of corresponding focus positions and the step of determining a desired next edge point source image (fig 1A, element A1, A2 and A3, page 2, second and fourth paragraph describes about locating plurality of edge points on target object which is TG) comprises selecting the one of the plurality of images that

is determined to have the best focus in the vicinity of the next edge point XY trial location. Thus applicant's prior art meets the claim limitations.

DETAILED ACTION

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 10, 12, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by applicant prior art Listed as "Description of prior art QUICK VISION series of vision inspection machines and QVPAK software", Page 1- 4 of the specification.

As to claim 1, applicant prior discloses a method for operating a vision system to determine a set of coordinates for a plurality of edge points (fig 1A, element A1, A2 and A3) along an edge contour of an object (fig 1A, TG corresponds to object) wherein the plurality of edge points extend over a depth range greater than the depth of field of an image of the edge contour, the method comprising:

determining the coordinates for at least a latest previous edge point (fig 1A, element A2) in at least a latest previous edge point image;

automatically determining a next edge point XY trial partially on the XY location of the latest previous edge point (fig 1A, A3);

Art Unit: 2623

determining a desired next edge point source image (fig 1A, element TG corresponds to source image) based on the next edge point XY trial location and previously acquired data, wherein the next edge point source image may be different than the latest previous edge point image due to the latest previous edge point and the next edge point being in focus at different focus positions (This limitation is described in the following lines in the "Background of the invention" starting from the line 14 "This product includes a two- dimensional auto trace edge detection tool ... A linear extrapolation line E1B is shown through the edge points B1 and B2 ". This information is described in detail in the above text. Each time the edge scan line is moved it is adjacent to the previous one. Each edge point is a focus point on that scan line. The steps are also mentioned in the figures 1A-1C. This limitation is taught by "description of prior art Quick Vision series of vision inspection machines and QVPAK software", refer to "Background of the invention" starting from the line 14 "This product includes a two- dimensional auto trace edge detection tool ... A linear extrapolation line E1B is shown through the edge points B1 and B2 ". Giving the claim language its broadest reasonable interpretation, applicant's prior art meets the claim limitations);

searching for the next edge point in the desired next edge point source image (fig 1A).

As to claim 2, applicant prior art discloses the method, wherein the previously acquired data comprises a plurality of images acquired at a plurality of corresponding focus positions and the step of determining a desired next edge point source image (fig 1A, element A1, A2 and A3, page 2, second and fourth paragraph describes about

Art Unit: 2623

locating plurality of edge points on target object which is TG) comprises selecting the one of the plurality of images that is determined to have the best focus in the vicinity of the next edge point XY trial location.

As to claim 10, applicant prior art discloses the method, wherein the step of determining a desired next edge point source image comprises:

determining a desired next edge point focus position based on the next edge point XY trial location and the previously acquired data (fig 1A, A3 corresponds to next edge point); and

determining a desired next edge point source image based on the desired next edge point focus position (fig 1A, source image corresponds to TG).

As to claim 12, applicant prior art discloses the method, wherein when the step of searching for the next edge point in the desired next edge point source image determines the coordinates of the next edge point, the method further comprises:

the just-determined next edge point (fig 1 A3) becomes the latest previous edge point (page 2, second and fourth paragraph describes about locating plurality of edge points on target object which is TG);

the desired next edge point image becomes the latest previous edge point image (fig 1A, page 2 fourth paragraph); and

the method iteratively continues with the step of automatically determining a next edge point XY trial location (page 1 and 2).

As to claim 16, applicant prior art discloses the method, wherein the method is employed for operating a vision system during a learn mode of operation (page 1, first paragraph).

As to claim 17, applicant prior art discloses the method, wherein the method is employed for operating a vision system during a run mode of operation (page 1, first paragraph).

Allowable Subject Matter

5. Claims 3 - 9, 11, 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP, 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Art Unit: 2623

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is. 571-272-7446. The examiner can normally be reached on Monday - Thursday 7.30 - 6.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sheela Chawan
Patent Examiner
Group Art Unit 2623
October 6, 2005